

REPORT DOCUMENTATION PAGE			Form Approved OMB No. 0704-0188	
Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.				
1. AGENCY USE ONLY (Leave blank)		2. REPORT DATE Aug-99		3. REPORT TYPE AND DATES COVERED Final Report: 13 Sep 95 thru 15 May 96
4. TITLE AND SUBTITLE Development of Performance Specification Process			5. FUNDING NUMBERS	
6. AUTHOR(S) Gary A. Maddux				
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Univ. of Alabama in Huntsville Huntsville, AL 35899			8. PERFORMING ORGANIZATION REPORT NUMBER 5-33958	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) AMSAM-RD-SE-IO (T. MULLINS) U.S. Army Aviation & Missile Command Redstone Arsenal, AL 35898			10. SPONSORING/MONITORING AGENCY REPORT NUMBER	
11. SUPPLEMENTARY NOTES				
12a. DISTRIBUTION / AVAILABILITY STATEMENT Approved for Public Release; Distribution is unlimited.			12b. DISTRIBUTION CODE A	
13. ABSTRACT (Maximum 200 words) The MICOM SEPD IOD has the mission and function of analyzing producibility and supportability for MICOM programs. The Research, Development and Engineering Center of MICOM was tasked with implementation of the Acquisition Reform guidance published in the "Blueprint for Change." IOD conducts reviews and analysis of spare and repair parts for competitive acquisition and was the lead for MICOM to convert from using Technical Data Packages (TDP) to Performance Specifications. In order to facilitate the transition from TDPs to Performance Specifications, UAH was tasked to conduct research, develop scenarios, make recommendations, and design a process to ensure that conversions were consistently applied and well documented.				
14. SUBJECT TERMS performance specifications, TRAPS			15. NUMBER OF PAGES 3	
			16. PRICE CODE	
17. SECURITY CLASSIFICATION OF REPORT	18. SECURITY CLASSIFICATION OF THIS PAGE	19. SECURITY CLASSIFICATION OF ABSTRACT	20. LIMITATION OF ABSTRACT	

19991004 033

PLEASE CHECK THE APPROPRIATE BLOCK BELOW

DAO# _____

☐ _____ copies are being forwarded. Indicate whether Statement A, B, C, D, E, F, or X applies.

☒ **DISTRIBUTION STATEMENT A:**
APPROVED FOR PUBLIC RELEASE: DISTRIBUTION IS UNLIMITED

☐ **DISTRIBUTION STATEMENT B:**
DISTRIBUTION AUTHORIZED TO U.S. GOVERNMENT AGENCIES ONLY; (indicate Reason and Date). OTHER REQUESTS FOR THIS DOCUMENT SHALL BE REFERRED TO (Indicate Controlling DoD Office).

☐ **DISTRIBUTION STATEMENT C:**
DISTRIBUTION AUTHORIZED TO U.S. GOVERNMENT AGENCIES AND THEIR CONTRACTS (Indicate Reason and Date). OTHER REQUESTS FOR THIS DOCUMENT SHALL BE REFERRED TO (Indicate Controlling DoD Office).

☐ **DISTRIBUTION STATEMENT D:**
DISTRIBUTION AUTHORIZED TO DoD AND U.S. DoD CONTRACTORS ONLY; (Indicate Reason and Date). OTHER REQUESTS SHALL BE REFERRED TO (Indicate Controlling DoD Office).

☐ **DISTRIBUTION STATEMENT E:**
DISTRIBUTION AUTHORIZED TO DoD COMPONENTS ONLY; (Indicate Reason and Date). OTHER REQUESTS SHALL BE REFERRED TO (Indicate Controlling DoD Office).

☐ **DISTRIBUTION STATEMENT F:**
FUTHER DISSEMINATION ONLY AS DIRECTED BY (Indicate Controlling DoD Office and Date) or HIGHER DoD AUTHORITY.

☐ **DISTRIBUTION STATEMENT X:**
DISTRIBUTION AUTHORIZED TO U.S. GOVERNMENT AGENCIES AND PRIVATE INDIVIDUALS OR ENTERPRISES ELIGIBLE TO OBTAIN EXPORT-CONTROLLED TECHNICAL DATA IN ACCORDANCE WITH DoD DIRECTIVE 5230.25. WITHHOLDING OF UNCLASSIFIED TECHNICAL DATA FROM PUBLIC DISCLOSURE, 6 Nov 1984 (indicate date of determination). CONTROLLING DoD OFFICE IS (Indicate Controlling DoD Office).

☐ This document was previously forwarded to DTIC on _____ (date) and the AD number is _____.

☐ In accordance with provisions of DoD instructions. The document requested is not supplied because:

☐ It will be published at a later date. (Enter approximate date, if known).

☐ Other. (Give Reason)

DoD Directive 5230.24, "Distribution Statements on Technical Documents," 18 Mar 87, contains seven distribution statements, as described briefly above. Technical Documents must be assigned distribution statements.

GARY A. MADDOX

Print or Type Name

Gary A. Maddox 20 Aug 99
Authorized Signature/Date

256 890 6343 x223

Telephone Number

Technical Report 5-33958
Contract No. DAAH01-92-D-R006
Delivery Order No. 83

Development of Performance Specification Process

(5-33958)

Final Technical Report for Period
13 September 1995 through 15 May 1996

August 1999

Prepared by:

Gary A. Maddux

Research Institute
The University of Alabama in Huntsville
Huntsville, Alabama 35899

Prepared for:

U.S. Army Missile Command
Redstone Arsenal, AL 35898
Attn.: Mr. Terry Mullins

PREFACE

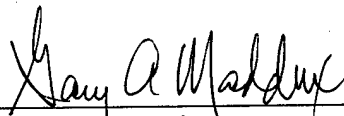
This technical report was prepared by the staff of the Research Institute, The University of Alabama in Huntsville. The purpose of this report is to provide documentation of the work performed and results obtained under Delivery Order 83 of MICOM Contract No. DAAH01-92-D-R006. Mr. Gary A. Maddux was the principal investigator. Mr. James Barrett and Ms. Alicia Fanning served as co-principal investigators. Mr. Terry Mullins, Industrial Operations Division, Systems Engineering and Production Directorate, Research, Development, and Engineering Center, U.S. Army Missile Command, provided technical coordination.

The views, opinions, and/or findings contained in this report are those of the author(s) and should not be construed as an official Department of the Army position, policy, or decision unless so designated by other official documentation.

Except as provided by the Contract Data Requirements List DD Form 1423, hereof, the distribution of any contract report in any state of development or completion is prohibited without the approval of the Contracting Officer.

Prepared for: Commander
U.S. Army Missile Command
Redstone Arsenal, AL 35898

I have reviewed this report, dated August 1999 and the report contains no classified information.



Principal Investigator

TABLE OF CONTENTS

1.0	INTRODUCTION.....	1
2.0	OBJECTIVES	1
3.0	STATEMENT OF WORK	1
4.0	PERFORMANCE SPECIFICATION PROCESS.....	2
5.0	CONCLUSIONS AND RECOMMENDATIONS	3

1.0 Introduction

The U.S. Army Missile Command (MICOM) Systems Engineering and Production Directorate (SEPD) Industrial Operations Division (IOD) has the mission and function of analyzing producibility and supportability for MICOM programs. The Research, Development and Engineering Center of MICOM was tasked with implementation of the Acquisition Reform guidance published in the "Blueprint for Change." This implementation involved the development of performance specifications for spare and repair parts and evaluation of the impact of these new specifications on the future supportability and readiness of the total system.

IOD conducts reviews and analysis of spare and repair parts for competitive acquisition and was the lead for MICOM to convert from using Technical Data Packages (TDP) to Performance Specifications. In order to facilitate the transition from TDPs to Performance Specifications, the Systems Management and Production Laboratory at The University of Alabama in Huntsville (UAH) was tasked to conduct research, develop scenarios, make recommendations, and design a process to ensure that conversions were consistently applied and well documented.

2.0 Objective

The objective of this task was to develop a TDP to Performance Specification conversion process for spare and repair parts. Research performed under this task would determine the appropriate use and relevance of performance specifications for systems with existing TDPs. The process was to be used in place of existing methods and used to replace TDPs where economic and effective use was warranted. This effort was to identify possible methods, improvements, and tools available to support the conversion to performance specifications.

3.0 Statement of Work

The statement of work, as outlined in delivery order 83, was as follows:

- 3.1 UAH shall develop and document a process for the development of performance specifications for missile components in missile related technology areas including electronics fabrication, inspection and test, and manufacturing operations. The process developed shall address the incorporation of manufacturing operations, quality control procedures, parts standardization and control, and testing procedures. The documentation shall be provided as a part of the final technical report.
- 3.2 UAH shall document a set of procedures for development of performance specifications and implementation of these new procedures into the spares procurement process. This documentation shall include implementation

approach, analysis of success of implementation, identification of major barriers to successful implementation, and impact of the new procedures on related functional specialties. The documentation shall be provided as a part of the final technical report.

4.0 Performance Specification Process

The Functional Support Templates (FST) Guide, as set forth by the Army Materiel Command (AMC) in a memorandum dated 5 July 1994, contained 22 templates covering a range of functional areas. These templates are used to evaluate the current method of acquisition versus an alternative approach that utilizes the development and use of performance specifications. As stated in the memo, "(The FST Guide)...considers alternatives to traditional functional ways of supporting acquisition. Application of the individual templates provides recommendations for eliminating low value functional requirements, applying commercial practices, using best value techniques, maintaining contractor flexibility and balancing."

The initial efforts of this research task were to review the existing "tech loop" process as it existed at MICOM, and to develop procedures that would be compatible with this process. Representatives from UAH, the Integrated Materiel Management Center (IMMC), the System Engineering and Production Directorate (SEPD), and the Product Assurance Directorate (PAD) served on a working group to determine the requirements for these new procedures. This working group performed investigations into current policies and procedures, and employed data gathering techniques such as interviews and visual observation to determine the most appropriate methodologies for inserting new procedures into existing systems.

Attempts at automation relied on the assumption that the analysis of a TDP could be broken into a set of fundamental questions, regardless of the TDP's complexity or simplicity. After several iterations of an acquisition package/TDP analysis during the design phase, a set of 34 questions was identified. These questions are grouped by the responding organization/function, (IMMC Item Manager, SEPD, and PAD), and corresponds to a paper questionnaire attached to each acquisition package. An output of the automation attempt was the Template Review and Analysis for Performance Specifications (TRAPS), a PC-based decision support tool.

The primary output of this task was an investigation of TRAPS and other state-of-the-art computer-based tools. Applications developed by the Navy and others were populated with MICOM-specific information to determine their applicability in the Army environment. The results of these analyses, along with candidate performance specifications, were delivered under separate cover.

5.0 Conclusion and Recommendations

During the time frame allocated by the delivery order, members of the UAH Systems Management and Production Lab, with the cooperation of representatives from MICOM SEPD, IMMC, and PAD, evaluated both a process and an automated tool to support the conversion of TDP reliant acquisition packages to those requiring performance specifications. The results of this evaluation were delivered to MICOM under separate cover.

As with any process, the conversion of TDPs to Performance Specifications will need to be analyzed on a regular basis. As the conversion of TDPs to performance specifications becomes more routine, the hours required should decrease as the learning curve levels. Therefore, even if initial estimates are currently perfect, then those will still show shifts over time. It is recommended that additional support be provided to the process to maintain a growing knowledge base.